

Uterine lipoleiomyoma: A case report of a rare entity

Bhavna Nayal, Puneet Kaur Somal, Anuradha CK Rao¹, Pratap Kumar²

Department of Pathology, Kasturba Medical College, Manipal, ¹Department of Pathology, Srinivas Institute of Medical Sciences and Research, Mukka, ²Department of Obstetrics and Gynaecology, Kasturba Medical College, Manipal, Mangalore, Karnataka, India

ABSTRACT

Lipomatous tumors of the uterus are rare neoplasms which can be divided into three broad groups – pure, mixed, and the exceedingly rare malignant liposarcoma. Lipoleiomyoma is a rare benign variant of leiomyoma with an incidence ranging between 0.03% and 0.2%. These tumors are usually seen in obese postmenopausal women and are usually asymptomatic but may also present with typical leiomyoma symptoms. The most common site of occurrence is the uterine corpus. Imaging plays an important role with magnetic resonance imaging being the modality of choice as it delineates the fat component better. The pathogenesis of this lesion is poorly understood. Histology shows a characteristic pattern with an encapsulated lesion with an admixture of smooth muscle cells, lobules of adipocytes and fibrous tissue. Prognosis is excellent. We report a case of lipoleiomyoma in an elderly, obese postmenopausal woman, who presented with abdominal discomfort and discuss the important differential diagnosis.

Key words: Lipoleiomyoma, lipomatous, postmenopausal, uterus

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INTRODUCTION

Primary lipid tumors of the uterus are rare and are usually benign.^[1] The spectrum of these tumors includes pure lipomas, lipoleiomyomas, and fibrolipomyomas.^[2] Lipoleiomyoma is a rare variant of uterine leiomyoma composed of an admixture of smooth muscle cells, lobules of adipocytes and fibrous tissue.^[3] They can be associated with adenomyosis, endometriosis, endometrial hyperplasia, and polyps.^[3] The incidence has been reported to range between 0.03% and 0.2%.^[4] We report a case of uterine lipoleiomyoma in an elderly, postmenopausal lady.

CASE REPORT

A 65-year-old postmenopausal, obese woman presented with

Address for correspondence: Dr. Bhavna Nayal,
Second Floor, Basic Sciences Building, Kasturba Medical College,
Manipal, Karnataka, India.
E-mail: bhavnayal@yahoo.com

history of pain abdomen and vomiting since 10 days. There was no history of postmenopausal bleeding, discharge per vaginum, dysuria, abdominal distension, or fever. Further history revealed that she had attained menopause 22 years ago and was a known case of hypertension and diabetes, presently on medication.

On physical examination, vitals were stable and abdominal examination revealed a mass of 16 weeks size which was firm and nontender. Gynaecological examination did not show any vulval or cervical abnormalities. Ultrasonography (USG) revealed atrophic uterus with a large heterogeneously echogenic lesion in the pelvis suggestive of a fibroid. In addition, transvaginal sonography revealed a 13 cm mass which was uniformly echogenic. Computed tomography (CT) showed an atrophic uterus with a well-circumscribed hypodense mass lesion of fat density measuring 11.1 cm × 10.2 cm × 11.2 cm with an enhancing soft tissue density rim arising from uterine fundus. Multiple interspersed areas of soft tissue densities

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were noted with no evidence of calcification. A possibility of lipoleiomyoma was suggested.

Routine hematological investigations were within normal limits. Fasting and postprandial glucose levels were elevated, and she was started on insulin. The patient underwent total abdominal hysterectomy with bilateral salpingo-oophorectomy.

On gross examination, endometrial cavity was obliterated by a well-circumscribed, gray-white growth measuring 10 cm × 9 cm × 3 cm with yellow fatty areas [Figure 1]. Cervix and both ovaries were unremarkable. Histopathological examination revealed an encapsulated tumor with interlacing fascicles of smooth muscle cells without nuclear atypia admixed with sheets of mature adipocytes. The nuclei of the smooth muscles were elongated and had even chromatin with no mitoses or necrosis [Figure 2]. The adipose component was devoid of lipoblasts. In addition to this, adenomyosis was also noted. Based on these findings, the tumor was diagnosed as a benign lipoleiomyoma.

DISCUSSION

A significantly uncommon entity, the broadly categorized lipomatous tumors of the uterus can be divided into three groups – pure lipomas, which are composed of encapsulated mature fat cells, lipomas with various mesodermal components (lipoleiomyomas, angiomyolipomas, and fibromyolipomas), and the rare malignant liposarcoma.^[5]

Uterine lipoleiomyoma is usually seen in obese postmenopausal women and is typically asymptomatic.^[3,6] When symptomatic, the patients usually experience symptoms similar to those seen in leiomyomas such as abnormal uterine bleeding, pelvic discomfort, palpable mass, urinary frequency, and incontinence.^[3] Lipoleiomyomas most commonly occur in the uterine corpus in an intramural location.^[6] They have also been described in the cervix, retroperitoneum, and broad ligament.^[3]



Figure 1: Well-circumscribed mass with a yellow cut surface

They usually present as a solitary mass ranging from 0.5 to 55 cm in size with mean size being 5.50 cm.^[3]

Various imaging modalities such as USG, CT, and magnetic resonance imaging (MRI) can be used to delineate the fatty component of the tumor. USG usually reveals a hyperechoic mass partially encased by a hypoechoic rim. This hypoechoic rim probably represents a peripheral strip of myometrium surrounding the lipid component.^[6] However, these features are not specific.

CT scan is more specific than USG as it clearly demonstrates the fatty component of the lesion and may also accurately differentiate uterine lipoleiomyoma from pure uterine lipoma.^[6] MRI remains the most useful modality in the final diagnosis. High signal intensity on both T1- and T2-weighted images characterizes the fatty areas, and this can be confirmed by fat suppression sequence.^[6] Although both MRI and CT can differentiate pure lipoma from lipoleiomyoma, MRI is superior to CT as it enables better tissue characterization. In addition to the visualization of septa inside the mass on the T1-weighted images, a peripheral low signal intensity rim corresponding to fibrous pseudocapsule can also be appreciated on MRI.^[6]

On gross examination, these tumors are well circumscribed with a thin connective tissue capsule and are mostly located in posterior wall of uterine corpus.^[1]

The pathogenesis of this tumor remains uncertain. Several mechanisms such as metaplasia of immature perivascular pluripotent mesenchymal cells or smooth muscle cells of leiomyoma to adipocytes, misplaced embryonic fat cells, and fatty infiltration of connective tissue have been suggested.^[3] Although earlier studies suggested that some lipoleiomyomas may result from lipomatous metaplasia of leiomyomas,

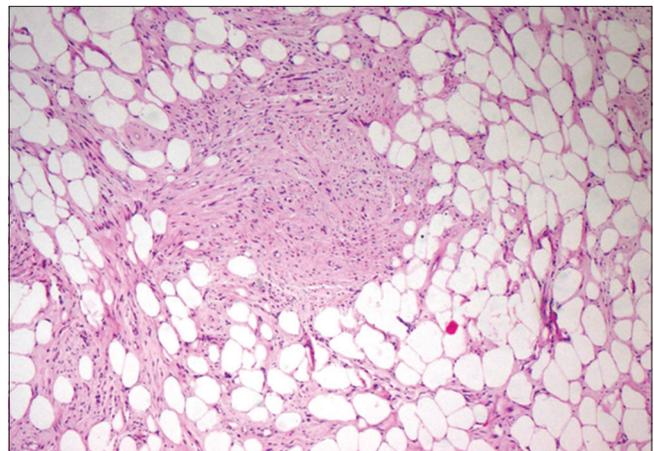


Figure 2: Admixture of smooth muscle cells and adipocytes on histology (H and E, ×40)

numerous immunohistochemical studies have indicated a more complex histogenesis.^[3]

The study by Akbulut *et al.* revealed that the fat component was positive for Ki-67, desmin, vimentin, and ER and PR receptors, which could probably mean that the adipose cells may have originated from the transformation of a totipotent mesenchymal cell.^[3]

Many studies have also postulated that a hyperestrogenic state may contribute to the development of lipoleiomyomas.^[7] Thus, lipid metabolism alteration associated with menopause may play a role in the development of lipoleiomyoma.^[3,4] In addition, some metabolic disorders such as hyperlipidemia, hypothyroidism, and diabetes mellitus have also been observed to occur commonly in these patients.^[3]

The common differential diagnosis of pelvic fatty tumors includes benign cystic ovarian teratoma, uterine fatty tumors, pelvic fibromatosis, well-differentiated liposarcoma, carcinosarcoma with heterologous liposarcomatous differentiation, and degeneration of leiomyomas.^[1,3]

Lipoleiomyoma can be differentiated from leiomyoma with fatty degeneration, by the even distribution of adipose tissue throughout the lesion. Further, it can be distinguished from leiomyosarcoma by the bland morphology in the smooth muscle component.^[1]

In addition, lipoleiomyomas may be commonly associated with leiomyomas and adenomyosis in the same patient. In the study by Akbulut *et al.*, the most common associated lesions were leiomyoma (33/70 cases) followed by adenomyosis in

24/70 cases.^[3] In the present case, associated adenomyosis was seen.

Thus, it is important that physicians be aware of this condition as it presents with clinical symptoms similar to leiomyoma but has distinctive radiological and histological appearance.

It also carries an excellent prognosis as when asymptomatic, no surgical intervention is usually required.

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Conflicts of interest

There are no conflicts of interest.

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